

REMARKS

Claims 1-4, 6, 10, 11, 14-16, and 20-24 remain in the application including independent claim 1, 14 and 20. Claims 5, 7-9, 12, 13, 17-19, and 25-30 have been withdrawn as being drawn to a non-elected species. Claim 31 has been withdrawn from consideration based on an election by original presentation. New claims 32-37 have been added, all new claims read on the elected species.

In response to Examiner's Election/Restriction action (Paper #3), dated May 6, 2001, Applicant elected Species A (Figures 1-2) indicating that claims 1-4, 6, 10, 11, and 14-16 read on the elected embodiment. In the next office action (Paper #5), the Examiner withdrew claims 5, 7-9, 12, 13, and 17-19 as being drawn to a non-elected species, however, no prior art was cited against either claims 4 and 6. In the current action (Paper #9), the Examiner is now also withdrawing claim 6 as being directed toward a non-elected species and providing a prior art rejection for claim 4, indicating that this oversight is the reason that current action is non-final.

Applicant respectfully traverses the withdrawal from consideration of claim 6. Claim 6 includes the feature of the sheet comprising alternating sections of a rigid polymeric material and a less rigid polymeric material. The embodiment shown in Figure 2 is described as a sheet of polymeric material 24 that is reinforced with spaced reinforcing fibers 26. Preferably, the reinforcing fibers 26 are arranged in a predetermined pattern. For example, the reinforcing fibers could be positioned in spaced rows. Another way of describing the panel is that the panel includes predetermined areas with high concentrations 28 of reinforcing fibers 26 and areas with low concentrations 30 or no reinforcing fibers 26. See page 3, line 19 through page 4, line 3. Thus, the sheet of Figure 2 has alternating sections of a rigid polymeric material (areas of high

concentrations of reinforcing fibers) and a less rigid polymeric material (areas of low concentrations or no reinforcing fibers). Because claim 6 reads on the elected species of Figure 2, Applicant respectfully requests that claim 6 not be withdrawn from consideration and respectfully requests an explanation of a rejection for claim 6.

Claims 1-2 stand rejected under 35 U.S.C. 102(b) as being anticipated by Amano ('627). In order to anticipate a claim under 102(b) each and every feature of the claim must be disclosed in the cited reference. Claim 1 includes the feature a body panel having spaced reinforcement on a sheet of material such that the panel crumples in a predetermined manner. Amano does not disclose Applicant's invention as set forth in claim 1.

First, Amano is not even relevant to Applicant's invention. Amano is directed toward the formation of a cylindrical inner fuselage wall to improve sound deadening in an aircraft and has nothing to do with forming a vehicle body panel in such a manner as to control crumpling in response to an impact force.

Second, even if Amano is determined to be relevant, it does not disclose, suggest, or teach the use of spaced reinforcement on a sheet of material to control crumpling. What the Examiner argues represents reinforcements 1c (see Figure 4) is simply one embodiment of an inner cylindrical plate with a wave-shaped cross-section. The plate includes corrugations formed about the circumference that extend in an axial direction. These corrugations are not reinforcements. As explained at col. 3, line 65 to column 4, line 2, "Every one of the cylindrical inner lining plates according to these preferred embodiments has a comparatively low tensile rigidity in the circumferential direction owing to the provision of a large number of corrugations defining crests extending parallel to one another in an axial direction." These crests are formed

in the inner lining plate to reduce the ring frequency of the cylinder and do not serve as reinforcements. See col. 5, lines 1-9.

With regard to claim 2, the reference to fiber-reinforced plastics simply means that the fuselage wall in Amano is made from a composite material. Amano discloses alternating overlying layers of woven material to form a cylindrical fuselage wall having greater rigidity in a circumferential direction than in an axial direction. There is no disclosure of spaced reinforcements on a polymer sheet of material in Amano as claimed by Applicant in claim 2. Thus, Applicant believes that the rejection under 35 U.S.C. 102(b) is improper and respectfully requests that the rejection be withdrawn.

Claims 3-4, 10-11, 14-16, and 20-24 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Spain ('697) in view of Amano and further in view of Vogt ('522). First, as discussed above, Amano is simply not relevant to Applicant's invention. Second, in order to sustain a rejection under 35 U.S.C. 103(a) there must be some motivation or suggestion in the references to modify the base reference. The Examiner argues that it would be obvious to modify the panels taught by Spain to include the anisotropic structure taught by Amano based on the teaching of Vogt.

There is no motivation to modify Spain with Amano. The teachings of Amano are directed toward the formation of a cylindrical body member for an airplane. Amano forms corrugations in a cylindrical inner fuselage plate to reduce the ring frequency of the cylinder to ultimately reduce the engine noise that is transmitted from outside the plane to the passenger cabin. There would be no reason to use the sound deadening techniques taught in Amano to control crumpling in Spain. Also, Amano is directed toward issues specifically related to cylindrical components while Spain and Vogt are directed toward planar vehicle body panels. The design issues for each of these

components are very different. Thus, there would be no reason to use the teachings of Amano to modify either Spain or Vogt.

Finally, one of the problems being addressed in Amano is described as follows: due to the cylindrical formation of the fuselage, "noise on the inside of the aircraft is larger compared to when a flat plate wall having the same cross-sectional structure is employed." See column 1, lines 14-64. Thus, Amano is attempting to achieve similar noise reducing characteristics that are already found in a flat plate component. Thus, there would be no reason to modify either Spain or Vogt with the teachings of Amano because Spain and Vogt are directed toward components that are of generally flat plate formations.

Further, even if the references are properly combined, the references do not disclose, suggest, or teach all of the claimed features. Claim 3 includes the combination of a polymer sheet with a sheet of colored material attached to the polymer sheet and with spaced reinforcements on the sheet of material such that the panel crumples in a predetermined manner. Claim 14 includes a polymeric material reinforced with a spaced reinforcing material on one side a colored material attached to an opposed side of the reinforced polymeric material wherein the colored material defines an exterior surface of a vehicle body panel and the polymeric material with the spaced reinforcing material is deformable in a predetermined manner in response to an impact force. Claim 20 includes a colored layer forming an exterior surface of a vehicle body panel and a reinforcement layer attached to said colored layer and including a plurality of first sections having a first deformability and a plurality of second sections having a second deformability that is less than said first deformability wherein said first and second sections alternate in a predetermined pattern laterally across the body panel.

As discussed above, the Examiner admits that Spain does not disclose spaced reinforcements or alternating sections have different deforming characteristics and uses Spain and Vogt as modifying references. Vogt teaches the use of a body panel having inner and outer skins bonded to a soft core structure made from foam, a honeycomb structure, or paper webbing to form crumple zones. Thus, Vogt does not teach forming spaced reinforcements or alternating sections in a vehicle body panel as defined by Applicant in claims 3, 14, and 20.

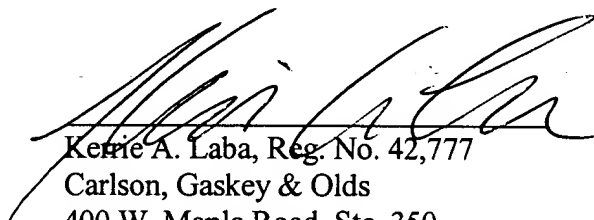
Amano also does not teach this feature. The reinforcements (1c) indicated by Examiner in Amano are not reinforcements for a body panel and in fact actually decrease the circumferential tensile strength of the cylindrical vessel. The corrugations 1c are formed within the cylinder to reduce the ring frequency. Amano does discuss anisotropic formation of a cylinder where the tensile rigidity in the circumferential direction is less than the tensile rigidity in the axial direction but this feature is specifically described as being a benefit related to a cylindrical component and not to that of a flat plate. Thus, Amano is directed toward issues specifically related to cylindrical components, which are very different than the planar vehicle body panels described in Spain and Vogt.

Further, the Examiner cites Figure 10 of Amano as showing reinforcing fibers in laterally spaced rows. Applicant respectfully traverses this characterization of Figure 10. Figure 10 simply shows the formation of a composite cylinder with layers have different fiber concentrations being overlaid on top of one another to form a composite cylindrical vessel. Figure 10 does not show first and second sections alternating in a predetermined pattern laterally across the body panel as claimed by Applicant in claims 20 and 16. In fact, the surface that extends across the vessel portion in Figure 10 is constant, i.e. is the same material, there is no alternating pattern.

Also with regard to claim 24, the Examiner argues that Amano shows alternately arranged areas of high and low concentrations of fibers extending in laterally spaced rows. No where in Amano is this taught. The layers of differing fiber concentrations are overlaid on top of one another such that fiber concentration varies radially outward, moving from the inner wall to the outer wall. Fiber concentration does not vary laterally or axially in Amano.

Thus, Applicant believes that all claims are allowable over the prior art, and an early indication of such is earnestly solicited. Applicant believes no additional fees are due, however, the Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional fees or credit the account for any overpayment.

Respectfully submitted,



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Dated: August 29, 2002

CERTIFICATE OF MAIL

I hereby certify that the enclosed Response is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Assistant Commissioner of Patents, Washington D.C. 20231 on this 29 day of August, 2002.



Laura Combs

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